

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously presented) A method of forming a core member for joining to at least one additional core member to form a composite comprising the steps of:
 - a) providing a dielectric substrate having opposite faces;
 - b) forming an electrically conductive coating on at least one face thereof;
 - c) forming at least one opening through said substrate extending from one face to the other and through each conductive coating;
 - d) dispensing an electrically conductive material in each of said openings extending through each conductive coating;
 - e) removing at least a portion of the surface of the conductive coating on at least one face to thereby allow a nub of the conductive material to extend above the surface of said substrate to thereby form a core that can be electrically joined face to face with another structure through said conductive material.
2. (Original) The invention as defined in claim 1 wherein said electrically conductive material is an electrically conductive adhesive.
3. (Original) The invention as defined in claim 1 wherein said electrically conductive material is a filled thermoset or thermoplastic polymer.
4. (Original) The invention as defined in claim 1 wherein said electrically conductive material is a filled polymer.

5. (Original) The invention as defined in claim 1 wherein the electrically conductive material is a filled epoxy.
6. (Original) The invention as defined in claim 4 wherein the epoxy is cured to between about 20% and about 80% of complete cure.
7. (Original) The invention as defined in claim 1 further including the step of plating a conductive material on the wall of each of said openings before dispensing said electrically conductive material in each of said openings.
8. (Original) The invention as defined in claim 1 wherein the electrically conductive coating is a metal and the portion of the surface is removed by partial etching.
9. (Original) The invention as defined in claim 1 wherein the electrically conductive coating is formed as two layers of different metals and where the removal of the surface portion of the electrical conductivity coating is removed by differential etching.
10. (Original) The invention as defined in claim 1 wherein at least one circuit trace is formed from said electrically conductive coating and the nub of said electrically conductive material extends above said at least one circuit trace.
11. (Original) The invention as defined in claim 1 wherein said electrically conductive material is an electrically conductive adhesive.
12. (Original) The invention as defined in claim 1 wherein the substrate is a glass reinforced epoxy.
13. (Withdrawn) The invention as defined in claim 1 wherein the substrate is a polyimide.

14. (Withdrawn) The invention as defined in claim 1 wherein the substrate is polytetrafluoroethylene.

15. (Original) The invention as defined in claim 1 wherein the electrically conductive material is dispensed into the said at least one opening in multiple passes.

16. (Original) The invention as defined in claim 1 wherein any residue of the electrically conductive material remaining on the surface of the electrically conductive coating is removed by polishing.

17. (Withdrawn) The invention as defined in claim 1 wherein any residue of the electrically conductive material remaining on the surface of the electrically conductive coating is removed by machine polishing.

18. (Original) The invention as defined in claim 1 wherein any residue of the electrically conductive material remaining on the surface of the electrically conductive coating is removed by chemical polishing.

19. (Currently amended) A method of forming and joining core members, comprising:

providing a first dielectric substrate and a second dielectric substrate, each substrate having opposite faces;

forming an electrically conductive coating on at least one face of the first and the second dielectric substrates;

forming at least one opening through the first and the second substrates, the opening extending from one face to the other through the conductive coating;

dispensing an electrically conductive material in each of the openings, the electrically conductive material extending through the conductive coating;

removing at least a portion of the surface of the conductive coating on at least one face of the first dielectric substrate to form a first nub of conductive material;

removing at least a portion of the surface of the conductive coating on at least one face of the second dielectric substrate to form a second nub of conductive material; and

directly joining the first and second dielectric substrates by joining the first and second nubs face-to-face.

20. (Currently amended) A method for joining printed wiring board core elements, comprising:

forming a first core member, wherein forming the first core member includes:

coating a dielectric substrate with a metal;

forming an opening through the coated substrate;

filling the opening with a conductive material; and

thinning the coating to form a protrusion of conductive material that protrudes beyond the substrate and the metal coat;

forming a second core member, wherein forming the second core member includes:

coating a second dielectric substrate with a metal;

forming an a second opening through the second coated substrate;

filling the second opening with a conductive material; and

thinning the coating to form a second protrusion of conductive material that protrudes and

laminating the first and second core members together by bonding the first and second conductive material protrusions together face-to-face.